

(12) UK Patent Application (19) GB (11) 2 373 680 (13) A

(43) Date of A Publication 25.09.2002

(21) Application No 0107390.7

(22) Date of Filing 23.03.2001

(71) Applicant(s)
The XY Network Limited
(Incorporated in the United Kingdom)
7th Floor Hillgate House, 26 Old Bailey, LONDON,
EC4M 7HW, United Kingdom

(72) Inventor(s)
Daniel Kofi Junior Abunu
Paul Robert Bennun

(74) Agent and/or Address for Service
Boult Wade Tennant
Verulam Gardens, 70 Gray's Inn Road, LONDON,
WC1X 8BT, United Kingdom

(51) INT CL⁷
H04Q 7/22 // H04M 11/08

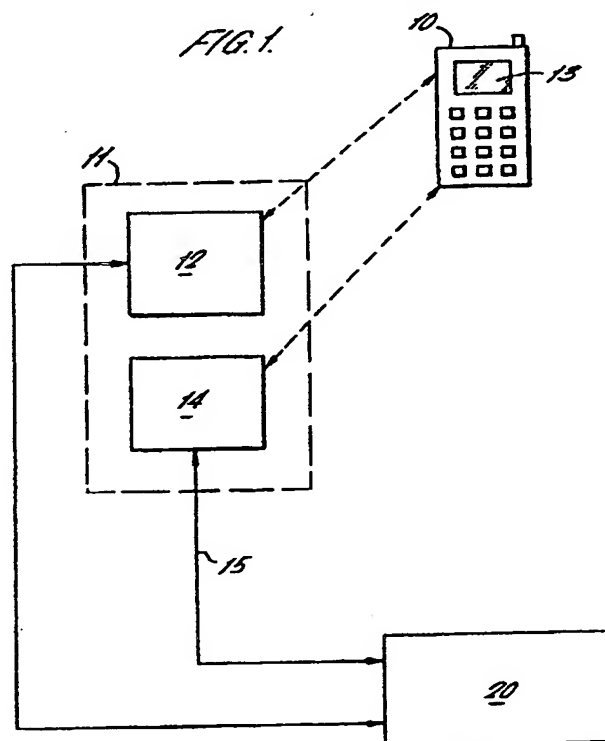
(52) UK CL (Edition T)
H4L LRAB

(56) Documents Cited
GB 2358107 A

(58) Field of Search
UK CL (Edition S) H4L LRAB
INT CL⁷ H04M 11/08 , H04Q 7/22
Online:WPI,EPODOC,JAPIO

(54) Abstract Title
Providing a broadcast service to a mobile telephone

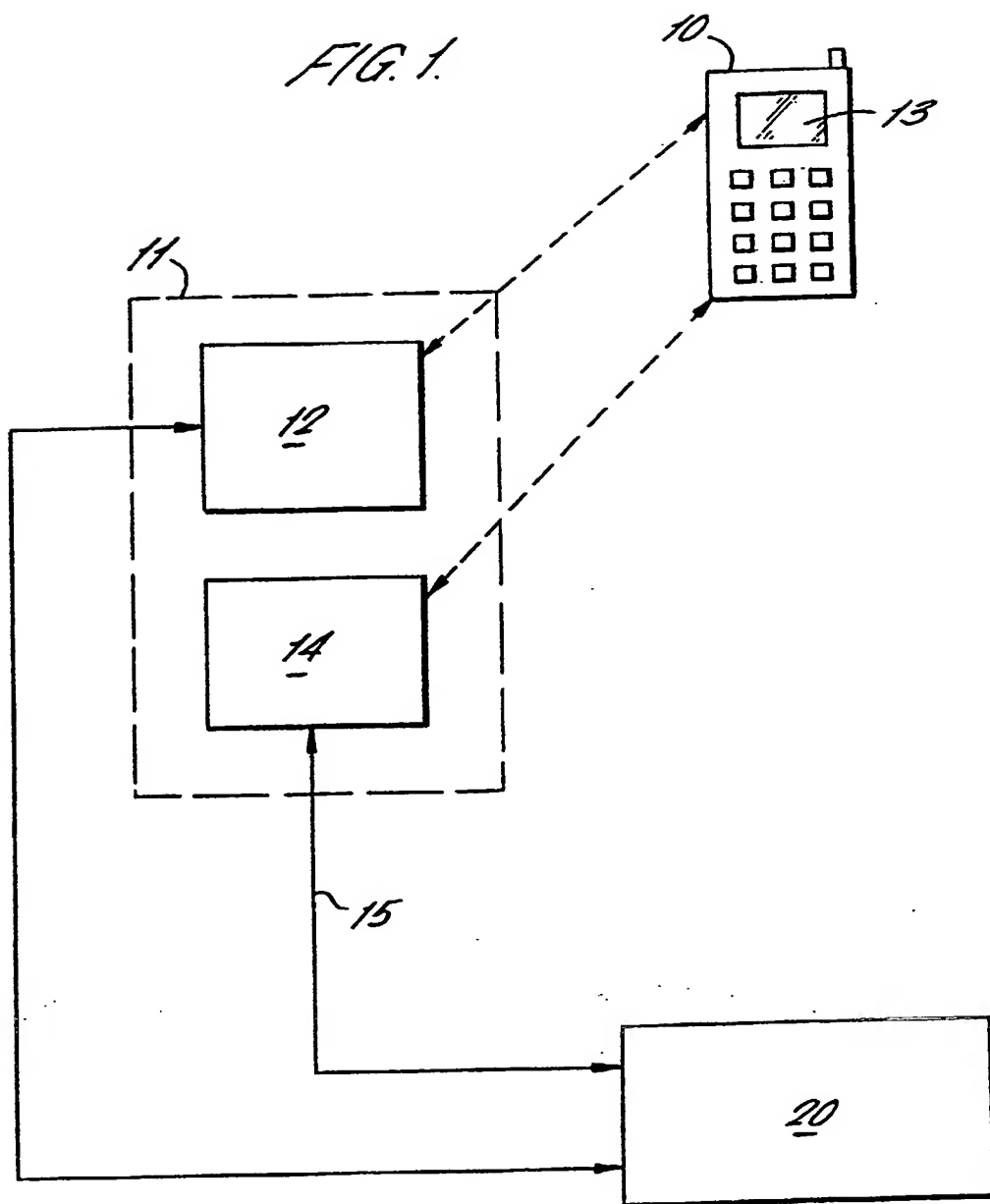
(57) A method of operating a mobile phone 10 having two operating modes wherein the mobile phone is used in the first mode to transmit identification data and receive instructions from a network such as the internet 11, the mobile phone, in response to the instructions received switches to a second operating mode and dials a telephone number to receive a broadcast service from broadcast apparatus. Methods in which the instructions are used to supply display data during connection to the broadcast apparatus and the identification data is used in conjunction with caller identification to verify the user of the mobile telephone are also described. Also a method of controlling the broadcast apparatus using tone signals activated by buttons on the telephone and of generating a tone signal by the selection of a text message are described.



BEST AVAILABLE COPY

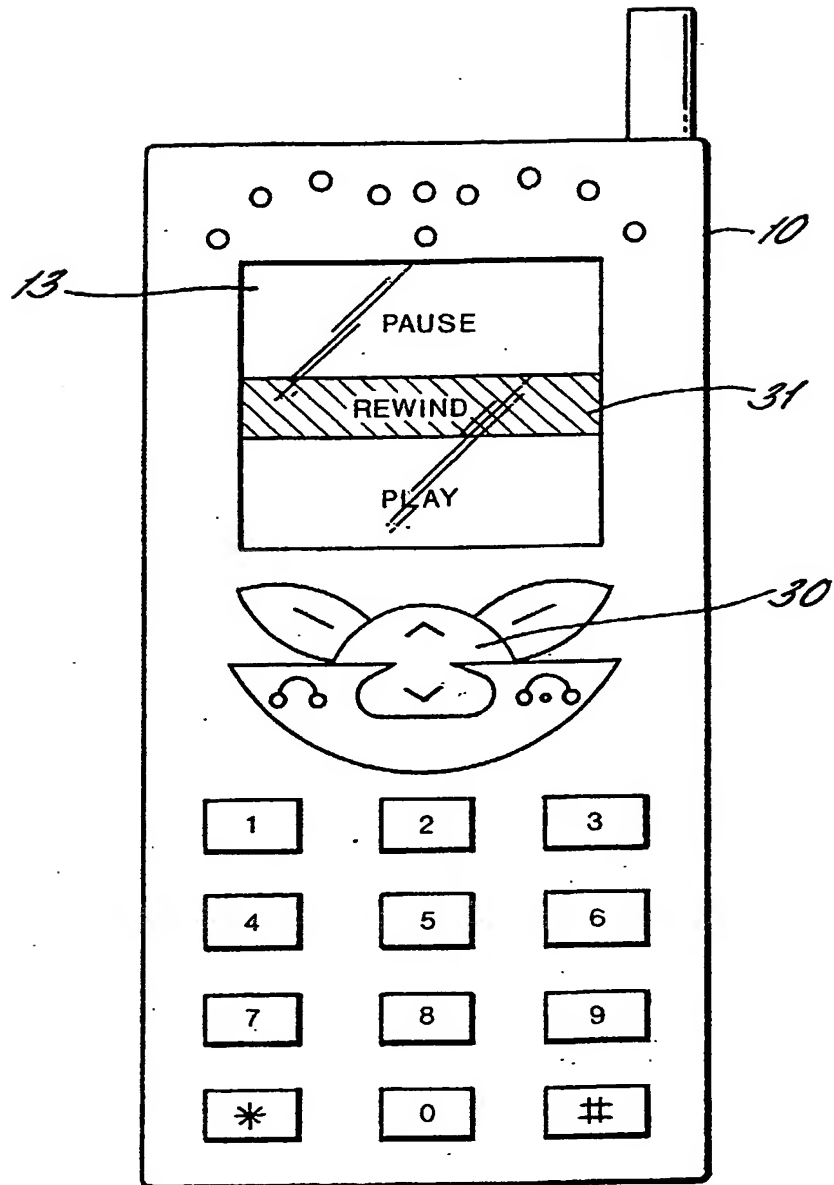
GB 2 373 680 A

FIG. 1



2/2

FIG. 2.



METHOD OF OPERATING A MOBILE TELEPHONE

The present invention relates to a method of operating a mobile telephone.

5

At present there are widely available so-called WAP mobile telephones. These mobile telephones enable a user to make telephone calls in the normal way and also enable the user to communicate via the Internet and access websites on the Internet and exchange information digitally by e-mail.

10

Also recently there has been an interest in broadcasting over the Internet. For instances, radio stations have been broadcasting not only in the traditional manner of radio transmissions but have also been broadcasting their programmes over the Internet. Broadcasting over the Internet allows a degree of interactivity and e.g. allows a listener to simply purchase a broadcast song by communicating with the broadcaster immediately after the song is broadcast.

15

20

The present invention provides in a first aspect a method of operating a mobile telephone which has a first operating mode in which the mobile telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second operating mode in which the mobile telephone can be used to send and receive voice messages, wherein the method comprises the steps of:

25

30

using the mobile telephone in the first operating mode thereof to access computer apparatus of a distributed network such as the Internet, to transmit

35

digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally; and

5 the mobile telephone, in response to the instructions received thereby, switching from the first operating mode thereof to the second operating mode thereof and then dialling a telephone number specified by the received digital instructions, whereby the mobile telephone is connected via a
10 telecommunications network with broadcast apparatus and a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus.

15 The present invention provides in a second aspect a method of operating a mobile telephone which has a first operating mode in which the mobile telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen
20 of the mobile telephone and which has a second operating mode in which the mobile telephone can be used to send and receive voice messages, wherein the method comprises the steps of:

using the mobile telephone in the first operating
25 mode thereof to access computer apparatus of a distributed computer network such as the Internet to transmit digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally;

30 subsequently using the mobile telephone in the second operating mode thereof and connecting the mobile telephone with broadcast apparatus whereby a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the
35 broadcast apparatus; and

the mobile telephone, in response to the digital instructions received thereby, displays data on the screen thereof during connection of the mobile telephone to the broadcast apparatus.

5

The present invention provides in a third aspect a method of operating a mobile telephone comprising the steps of:

10 connecting the mobile telephone with broadcast apparatus so that a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus;

15 the broadcast apparatus monitoring communication with the mobile telephone and recognising any tonal signals generated by the mobile telephone during the period of transmission of the broadcast service; and

20 actuating one or more keys of the mobile telephone during the period of transmission of the broadcast service to cause the mobile telephone to generate tonal signals which are recognised by the broadcast apparatus whereby the operation of the broadcast apparatus is controlled remotely by the user of the mobile telephone.

25 The present invention provides in a fourth aspect a method of operating a mobile telephone, the method comprising the steps of:

30 storing in a memory means of the mobile telephone an instruction which associates a first text message on a screen of the mobile telephone with a function of generation of a tonal signal by the mobile telephone;

actuating keys of the mobile telephone to highlight the displayed first text message and then select the function associated therewith; and

35 the mobile telephone generating a tonal signal

according to the stored instruction which is distinct from any tonal signal generated by actuation of a numeric key of the mobile telephone.

5 The present invention provides in a fifth aspect a method of operating a mobile telephone which has a first operating mode in which the mobile telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second
10 operating mode in which the mobile telephone can be used to send and receive voice messages, wherein the method comprises the steps of:

using the mobile telephone in the first operating mode thereof to access first computer apparatus of a
15 distributed network such as the Internet, and to transmit digitally identification data to the accessed first computer apparatus;

connecting the mobile telephone in the second operating mode thereof via a telecommunications
20 network with second computer apparatus to receive voice messages from the second computer apparatus;

the second computer apparatus obtaining caller identification information identifying the mobile telephone; and

25 the second computer apparatus comparing the caller identification information with the identification data previously received by the first computer apparatus in order to verify that the mobile telephone connected with the second computer apparatus
30 is being used by an authorised user.

Preferred embodiments of the present invention will be described with reference to the accompanying Figures in which:

35 Figure 1 is a schematic representation of a

mobile telephone system operating according to the methods of the present invention;

Figure 2 is a schematic representation of a mobile telephone handset during operation according to the methods of the present invention.

In Figure 1 there can be seen a mobile telephone 10, which is operable in two different modes.

10 In a first mode the mobile telephone 10 operates to transmit and receive digital signals encoding data obtained e.g. from the Internet. The mobile telephone 10 is used to dial up a mobile telephone network provider 11, specifically a server 12 operated by the
15 provider 11 which is connected to the Internet. In the first operating mode, the mobile telephone 10 can be used to access websites on the Internet with data being exchanged between the server 12 and the mobile telephone handset 10. The mobile telephone handset 10
20 has a screen 13 upon which will appear at least some received data in the form of text or graphics. Communication between the handset 10 and the server 12 will be in part by digital radio transmission, digital radio signals passing between the handset 10 and the
25 nearest appropriate receiver.

In the second mode of operation the mobile telephone handset 10 is used to communicate voice transmissions. The speech of a user of the handset 10
30 is converted into radio signals which are transmitted by the handset 10 and picked up by the nearest radio mast. The signals are then relayed to a "voice" server 14 of a mobile telephone network operator. The signals are then transmitted in the manner of an
35 ordinary telephone call via a landline 15 over a

standard telecommunications network.

According to a method of operation of the present invention, the user of the handset 10 will first use
5 the handset 10 in its first operating mode to connect with a website on the Internet. This is illustrated simplistically in the drawing by the handset 10 connecting with the server 12 and then being linked by the server 12 over the Internet with a computer server
10 20 which hosts a website. The user of the handset 10 will then be required by the website to input a unique identifier, e.g. a password, so that the server 20 recognises the user of the mobile telephone. This, of course, assumes that an identifier has already been
15 assigned to the user. In the case that a user accesses the website for the first time there will be a registration process during which the user will be allocated a unique identifier.

20 When the user has accessed the website then he/she is presented with the range of different broadcasts to select from. For instance, there could be a music broadcast service, an entertainment service broadcast (e.g. giving reviews on films and plays
25 etc), a news broadcast, a broadcast giving advice on lifestyle issues, a broadcast giving horoscope details and a broadcast giving book reviews. The user of the mobile telephone handset 10 will select one of the broadcasts which are available by use of the keypad of
30 the mobile telephone handset 10.

Once a broadcast has been selected then the server 20 will send a signal back via the telecommunications network to the server 12 of the
35 mobile telephone operator which will then be relayed

to the handset 10. This relayed signal will instruct the handset 10 to switch out of its first operating mode into the second operating mode and to then dial a particular telephone number. The telephone number
5 will depend on the broadcast service selected. Each broadcast service will have an individual telephone number or range of telephone numbers. At the same time, the signal relayed from server 20 will instruct the handset 10 to display certain text messages on the
10 screen 13, as will be described later.

Responding to the instructions received from the server 20 a mobile telephone handset 10 will dial up a specified number while operating in the second
15 operating mode, i.e. the "voice" mode. The mobile telephone handset 10 will then be connected via the server 14 and the telecommunications link 15 to the server 20 in the manner of a normal telephone call. On connection of the mobile telephone 10 to the server 20
20 the server 20 will use the caller identification information routinely supplied by the telephone operator 11 to identify the mobile telephone 10 and the server 20 will be able to confirm that the mobile telephone 10 is being used by a user who has
25 previously accessed the website hosted by the server 20. It is envisaged that the server 20 will comprise a database in which each unique identifier issued to each user is associated with caller identification information for a mobile telephone of the user. This
30 is a novel security measure. Whilst it may prove possible to improperly obtain user information and access the broadcast service using a WAP telephone in the WAP mode thereof, it will be impossible to hear a selected broadcast unless the handset used is the
35 handset recorded against the user information in the

database.

5 Upon successful connection, a selected broadcast service is transmitted to the mobile telephone so that the user of the mobile telephone can listen to the broadcast service he/she has selected. This is done in the manner of a voice transmission.

10 As mentioned above, when the mobile telephone handset 10 is operated in the first operating mode, a server 20 will not only send to the handset 10 an instruction to dial a particular telephone number and therefore receive the selected broadcast service, but the mobile telephone handset 10 is also instructed to
15 display certain text messages. These text messages are shown in Figure 2. In Figure 2 it can be seen that on the screen 13 there are displayed the words "PAUSE", "PLAY" and "REWIND". Whilst the server 20 transmits the selected broadcast service to the mobile telephone
20 10 operating in voice mode, the server 20 will listen for tones generated by the handset 10 on the "touch-tone" principle, which is well known.

25 When the user of the handset 10 scrolls using key 30 and highlights displayed text, e.g. 31 and selects the indicated function then the mobile telephone 10 will act in accordance with instructions previously received from the server 10 (when the telephone 10 was operating in the first operating (WAP) mode) and will
30 generate a tonal signal. The tonal signal is received by the server 10 and taken as an instruction. The server 10 will time shift the broadcast service backwards to an earlier point in the transmission. Most mobile telephones are capable of producing 16
35 different tonal signals. However, only 12 are commonly

used by a mobile telephone, these being generated in response to actuation of the numeric keys 0 to 9 or of the "*" or "#" key. The received instructions will cause the mobile telephone to generate a hidden tonal
5 signal, not being one of the usual 12 tonal signals, so that a specified function is not activated by accidental actuation of a numeric key or of the "*" or "#" key.

10 The instructions to display the text messages on the screen as well as the instruction to generate tonal signals associated with the text messages are stored in a temporary memory of the mobile telephone handset. They are stored and usable only for the
15 period of connection in "voice mode" of the handset 10 with the server 20 immediately following a connection in "WAP" mode.

The Figure 3 shows that a "pause" function could
20 be selected which would cause the mobile telephone handset to generate a tonal signal which would be recognised by the server 20 as an instruction to suspend the transmission of the broadcast service. The Figure 2 also shows a "play" function, selection
25 of which will cause the mobile telephone to generate a tonal signal which will be recognised by the server 20 as an instruction to restart a previously paused transmission or to stop time shifting and restart a broadcast transmission previously time shifted.

30 Instructions for other functions could be uploaded to the mobile telephone handset 10 along with associated text. For instance, a "select" instruction could be used by a user to select a particular musical
35 track for purchase.

Whilst above the server 2 relays to the handset
10 instructions to call a telephone number associated
with a particular broadcast service, the selection of
a broadcast service could alternatively be stored in a
5 database of the server 20 so that when the mobile
telephone is connected in "voice mode" to the server
20 the caller identification could be used to retrieve
from the database details of the earlier selected
broadcast service, so that the correct service is
10 transmitted to the handset 10.

In the currently preferred embodiment of the
invention the mobile telephone handset 10 will operate
using the internationally recognised Wireless
15 Application Protocol (WAP) in the first mode of
operation and the normal voice mode in the second mode
of operation. However, it is recognised that WAP may
be replaced by other protocols and the method of
operation of the invention could be used with other
20 protocols as and when they become available.

CLAIMS

1. A method of operating a mobile telephone which has a first operating mode in which the mobile
5 telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second operating mode in which the mobile
10 telephone can be used to send and receive voice messages, wherein the method comprises the steps of:
using the mobile telephone in the first operating mode thereof to access computer apparatus of a distributed network such as the Internet, to transmit
15 digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally; and
the mobile telephone, in response to the instructions received thereby, switching from the
20 first operating mode thereof to the second operating mode thereof and then dialling a telephone number specified by the received digital instructions, whereby the mobile telephone is connected via a telecommunications network with broadcast apparatus
and a user of the mobile telephone hears via the
25 mobile telephone a broadcast service transmitted by the broadcast apparatus.

2. A method as claimed in claim 1 wherein:
when the mobile telephone is used to access the
30 computer apparatus the mobile telephone receives broadcast service selection data transmitted digitally by the computer apparatus, which data is displayed on the screen of the mobile telephone and which displayed data indicates to the user a plurality of different
35 broadcast services which are available;

the user of the mobile telephone selects a broadcast service from the plurality offered by depressing one or more keys of the mobile telephone and thereby causes the mobile telephone to transmit a selection message to the computer apparatus; and

the computer apparatus processes the selection message when producing the digital instructions in order to produce digital instructions which will cause the mobile telephone to dial a number appropriate for the selected broadcast service.

3. A method as claimed in claim 1 wherein:

when the mobile telephone is used to access the computer apparatus the mobile telephone receives broadcast service selection data transmitted digitally by the computer apparatus, which data is displayed on the screen of the mobile telephone and which displayed data indicates to the user a plurality of different broadcast services which are available;

the user of the mobile telephone selects a broadcast service from the plurality offered by depressing one or more keys of the mobile telephone and thereby causing the mobile telephone to transmit a selection message to the computer apparatus; and

the computer apparatus stores the selection message for use by the broadcast apparatus so that when the mobile telephone is operating in the second operating mode thereof and the mobile telephone is connected to the broadcast apparatus then the previously selected broadcast service is transmitted to the mobile telephone.

4. A method as claimed in claim 3 wherein: the accessed computer apparatus has a database and the method comprises storing in the database for each

mobile telephone a unique identifier which is used as at least part of the identification data transmitted by a user to the accessed computer apparatus when the mobile telephone is operated in the first operating mode thereof; and

the method comprises storing in association with each unique identifier a voice account identifier which is received by the broadcast apparatus when the mobile telephone is connected thereto whilst operating in the second operating mode thereof; and

wherein the selection message is stored in the database in association with the unique identifier so that when the mobile telephone is connected to the broadcast apparatus and the broadcast apparatus receives the voice account identifier for the mobile telephone then the broadcast apparatus can select an appropriate previously stored selection message from the database.

5. A method as claimed in claim 1 wherein the mobile telephone in response to the instructions received thereby displays information on the screen thereof throughout the period during which the mobile telephone is connected with the broadcast apparatus.

6. A method as claimed in claim 5 wherein:
the displayed information indicates availability of a pause function; the broadcast apparatus monitors communication with the mobile telephone and recognises tonal signals generated by the mobile telephone; and the user by operating one or more keys of the mobile telephone selects the pause function by causing the mobile telephone to generate a tonal signal which is received and recognised by the broadcast apparatus which then pauses the broadcast transmission to the

mobile telephone.

7. A method as claimed in claim 6 wherein the mobile
telephone receives in the digital instructions an
5 instruction which associates a tonal signal with the
pause function, the tonal signal being distinct from
any tonal signal generated by actuating any of the
numeric keys of the mobile telephone.

10 8. A method as claimed in claim 5 wherein: the
displayed information indicates a rewind function; the
broadcast apparatus monitors communication with the
mobile telephone and recognises tonal signals
generated by the mobile telephone; and the user by
15 operating one or more keys of the mobile telephone can
select the rewind function by causing the mobile
telephone to generate a tonal signal which is received
and recognised by the broadcast apparatus which then
time shifts the transmission broadcast to the mobile
20 telephone.

9. A method as claimed in claim 8 wherein the mobile
telephone receives in the digital instructions an
instruction which associates a tonal signal with the
25 rewind function, the tonal signal being distinct from
any tonal signal generated by actuation of a numeric
key of the mobile telephone.

10. A method as claimed in claim 1 wherein: the
30 broadcast apparatus obtains caller identification
information identifying the mobile telephone and
compares the caller identification information with
the identification data previously received in order
to verify that the mobile telephone connected with the
35 broadcast apparatus is being used by an authorised

user.

11. Use of a mobile telephone in the method claimed
in claim 1.

5

12. Use of computer apparatus as broadcast computer
apparatus in the method of claim 1.

10

13. Use of computer apparatus to receive
identification data and to transmit instructions to a
mobile telephone in the method of claim 1.

15

14. A method of operating a mobile telephone which
has a first operating mode in which the mobile
telephone can send and receive data transmitted
digitally with at least some received data being
displayed on a screen of the mobile telephone and
which has a second operating mode in which the mobile
telephone can be used to send and receive voice
messages, wherein the method comprises the steps of:

20

using the mobile telephone in the first operating
mode thereof to access computer apparatus of a
distributed computer network such as the Internet to
transmit digitally identification data to the accessed
computer apparatus and to receive from the accessed
computer apparatus instructions transmitted digitally;

25

subsequently using the mobile telephone in the
second operating mode thereof and connecting the
mobile telephone with broadcast apparatus whereby a
user of the mobile telephone hears via the mobile
telephone a broadcast service transmitted by the
broadcast apparatus; and

30

the mobile telephone, in response to the digital
instructions received thereby, displays data on the
screen thereof during connection of the mobile

35

telephone to the broadcast apparatus.

15. A method as claimed in claim 14 wherein: the
displayed information indicates availability of a
5 pause function;

the broadcast apparatus monitors communication
with the mobile telephone and recognises tonal signals
generated by the mobile telephone;

10 and the user by operating one or more keys of the
mobile telephone selects the pause function by causing
the mobile telephone to generate a tonal signal which
is received and recognised by the broadcast apparatus
which then pauses the broadcast transmission to the
mobile telephone.

15

16. A method as claimed in claim 15 wherein the
mobile telephone receives in the digital instructions
an instruction which associates a tonal signal with
the pause function, the tonal signal being distinct
20 from any signal generated by actuation of any of the
numeric keys of the mobile telephone.

17. A method as claimed in claim 14 wherein: the
displayed information indicates a rewind function;

25 the broadcast apparatus monitors communication
with the mobile telephone and recognises tonal signals
generated by the mobile telephone; and

the user by operating one or more keys of the
mobile telephone can select the rewind function by
30 causing the mobile telephone to generate a tonal
signal which is received and recognised by the
broadcast apparatus which then time shifts the
transmission broadcast to the mobile telephone.

35 18. A method as claimed in claim 17 wherein the

mobile telephone receives in the digital instructions an instruction which associates a tonal signal with the rewind function, the tonal signal being distinct from any tonal signal generated by actuation of a numeric key of the mobile telephone.

19. A method of operating a mobile telephone comprising the steps of:

connecting the mobile telephone with broadcast apparatus so that a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus;

the broadcast apparatus monitoring communication with the mobile telephone and recognising any tonal signals generated by the mobile telephone during the period of transmission of the broadcast service; and

actuating one or more keys of the mobile telephone during the period of transmission of the broadcast service to cause the mobile telephone to generate tonal signals which are recognised by the broadcast apparatus whereby the operation of the broadcast apparatus is controlled remotely by the user of the mobile telephone.

20. A method as claimed in claim 19 wherein the user of the mobile telephone causes the mobile telephone to generate a tonal signal which is recognised by the broadcast apparatus as an instruction to pause the broadcast service transmitted thereby.

21. A method as claimed in claim 19 wherein the user of the mobile telephone causes the mobile telephone to generate a tonal signal which is recognised by the broadcast apparatus as an instruction to time shift the broadcast service transmitted thereby.

22. A method of operating a mobile telephone , the method comprising the steps of:

5 storing in a memory means of the mobile telephone
an instruction which associates a first text message
on a screen of the mobile telephone with a function of
generation of a tonal signal by the mobile telephone;
 actuating keys of the mobile telephone to
10 highlight the displayed first text message and then
select the function associated therewith; and
 the mobile telephone generating a tonal signal
according to the stored instruction which is distinct
from any tonal signal generated by actuation of a
15 numeric key of the mobile telephone.

23. A method as claimed in claim 22 wherein:

 the mobile telephone operated according to the
method has a first operating mode in which the mobile
20 telephone can send and receive data transmitted
digitally with at least some received data being
displayed on the screen of the mobile telephone and a
second operating mode in which the mobile telephone is
used to send and receive voice messages; and
25 the instruction which associates the first text
message with the function of generation of the tonal
signal is received by the mobile telephone when
operating in the first operating mode thereof from
remote computer apparatus of a distributed network
30 such as the Internet;
 the received instruction is stored in the memory
means; and
 the tonal signal generated according to the
stored instruction is generated when the mobile
35 telephone is operating in the second operating mode

thereof.

24. A method as claimed in claim 23 wherein the
received instruction is stored in the memory means
5 only temporarily.

25. A method as claimed in claim 24 wherein the
received instruction is received into and stored in
the memory means whilst the mobile telephone is
10 operating in the first operating mode thereof only for
use during immediately subsequent operation of the
mobile telephone in the second operating mode thereof.

26. A method of operating a mobile telephone which
15 has a first operating mode in which the mobile
telephone can send and receive data transmitted
digitally with at least some received data being
displayed on a screen of the mobile telephone and
which has a second operating mode in which the mobile
20 telephone can be used to send and receive voice
messages, wherein the method comprises the steps of:
using the mobile telephone in the first operating
mode thereof to access first computer apparatus of a
distributed network such as the Internet, and to
25 transmit digitally identification data to the accessed
first computer apparatus;

connecting the mobile telephone in the second
operating mode thereof via a telecommunications
network with second computer apparatus to receive
30 voice messages from the second computer apparatus;
the second computer apparatus obtaining caller
identification information identifying the mobile
telephone; and

the second computer apparatus comparing the
35 caller identification information with the

identification data previously received by the first computer apparatus in order to verify that the mobile telephone connected with the second computer apparatus is being used by an authorised user.

5

27. Use of a mobile telephone in the method of claim 26.

10

28. Use of computer apparatus as first computer apparatus in the method of claim 26.

29. Use of computer apparatus as second computer apparatus in the method of claim 26.

15

: 275736:

Amendments to the claims have been filed as follows

CLAIMS

1. A method of operating a mobile telephone which has a first operating mode in which the mobile
5 telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second operating mode in which the mobile
10 telephone can be used to send and receive voice messages, wherein the method comprises the steps of:
 using the mobile telephone in the first operating mode thereof to access computer apparatus of a distributed network such as the Internet, to transmit
15 digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally; and
 the mobile telephone, in response to the instructions received thereby, switching from the
20 first operating mode thereof to the second operating mode thereof and then dialling a telephone number specified by the received digital instructions, whereby the mobile telephone is connected via a telecommunications network with broadcast apparatus
25 and a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus; wherein
 the mobile telephone in response to the instructions received thereby displays information on the screen thereof throughout the period during which
30 the mobile telephone is connected with the broadcast apparatus;
 the displayed information indicates availability of a pause function;
 the broadcast apparatus monitors communication
35 with the mobile telephone and recognises tonal signals generated by the mobile telephone;
 the user by operating one or more keys of the

mobile telephone selects the pause function by causing the mobile telephone to generate a tonal signal which is received and recognised by the broadcast apparatus which then pauses the broadcast transmission to the mobile telephone; and

the mobile telephone receives in the digital instructions an instruction which associates a tonal signal with the pause function, the tonal signal being distinct from any tonal signal generated by actuating any of the numeric keys of the mobile telephone or of a "*" or a "#" key.

2. A method of operating a mobile telephone which has a first operating mode in which the mobile telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second operating mode in which the mobile telephone can be used to send and receive voice messages, wherein the method comprises the steps of:

using the mobile telephone in the first operating mode thereof to access computer apparatus of a distributed network such as the Internet, to transmit digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally; and

the mobile telephone, in response to the instructions received thereby, switching from the first operating mode thereof to the second operating mode thereof and then dialling a telephone number specified by the received digital instructions, whereby the mobile telephone is connected via a telecommunications network with broadcast apparatus and a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus; wherein

the mobile telephone in response to the

instructions received thereby displays information on the screen thereof throughout the period during which the mobile telephone is connected with the broadcast apparatus;

5 the displayed information indicates a rewind function;

 the broadcast apparatus monitors communication with the mobile telephone and recognises tonal signals generated by the mobile telephone;

10 the user by operating one or more keys of the mobile telephone can select the rewind function by causing the mobile telephone to generate a tonal signal which is received and recognised by the broadcast apparatus which then time shifts the transmission broadcast to the mobile telephone; and

15 the mobile telephone receives in the digital instructions an instruction which associates a tonal signal with the rewind function, the tonal signal being distinct from any tonal signal generated by actuation of a numeric key of the mobile telephone or
20 of a "*" or a "#" key.

3. A method as claimed in claim 1 or claim 2 wherein:

25 when the mobile telephone is used to access the computer apparatus the mobile telephone receives broadcast service selection data transmitted digitally by the computer apparatus, which data is displayed on the screen of the mobile telephone and which displayed data indicates to the user a plurality of different
30 broadcast services which are available;

 the user of the mobile telephone selects a broadcast service from the plurality offered by depressing one or more keys of the mobile telephone and thereby causes the mobile telephone to transmit a
35 selection message to the computer apparatus; and

 the computer apparatus processes the selection

message when producing the digital instructions in order to produce digital instructions which will cause the mobile telephone to dial a number appropriate for the selected broadcast service.

5

4. A method as claimed in claim 1 or claim 2 wherein:

when the mobile telephone is used to access the computer apparatus the mobile telephone receives
10 broadcast service selection data transmitted digitally by the computer apparatus, which data is displayed on the screen of the mobile telephone and which displayed data indicates to the user a plurality of different broadcast services which are available;

15 the user of the mobile telephone selects a broadcast service from the plurality offered by depressing one or more keys of the mobile telephone and thereby causing the mobile telephone to transmit a selection message to the computer apparatus; and

20 the computer apparatus stores the selection message for use by the broadcast apparatus so that when the mobile telephone is operating in the second operating mode thereof and the mobile telephone is connected to the broadcast apparatus then the
25 previously selected broadcast service is transmitted to the mobile telephone.

5. A method as claimed in claim 4 wherein: the accessed computer apparatus has a database and the
30 method comprises storing in the database for each mobile telephone a unique identifier which is used as at least part of the identification data transmitted by a user to the accessed computer apparatus when the mobile telephone is operated in the first operating
35 mode thereof; and

the method comprises storing in association with each unique identifier a voice account identifier

which is received by the broadcast apparatus when the mobile telephone is connected thereto whilst operating in the second operating mode thereof; and

5 wherein the selection message is stored in the database in association with the unique identifier so that when the mobile telephone is connected to the broadcast apparatus and the broadcast apparatus receives the voice account identifier for the mobile telephone then the broadcast apparatus can select an
10 appropriate previously stored selection message from the database.

6. A method as claimed in claim 1 or claim 2 wherein: the broadcast apparatus obtains caller
15 identification information identifying the mobile telephone and compares the caller identification information with the identification data previously received in order to verify that the mobile telephone connected with the broadcast apparatus is being used
20 by an authorised user.

7. Use of a mobile telephone in the method claimed in claim 1 or claim 2.

25 8. Use of computer apparatus as broadcast computer apparatus in the method of claim 1 or claim 2.

9. Use of computer apparatus to receive
30 identification data and to transmit instructions to a mobile telephone in the method of claim 1 or claim 2.

10. A method of operating a mobile telephone which has a first operating mode in which the mobile telephone can send and receive data transmitted
35 digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second operating mode in which the mobile

telephone can be used to send and receive voice messages, wherein the method comprises the steps of:

5 using the mobile telephone in the first operating mode thereof to access computer apparatus of a distributed computer network such as the Internet to transmit digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally; and

10 subsequently using the mobile telephone in the second operating mode thereof and connecting the mobile telephone with broadcast apparatus whereby a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus; wherein:

15 the mobile telephone, in response to the digital instructions received thereby, displays data on the screen thereof during connection of the mobile telephone to the broadcast apparatus;

20 the displayed information indicates availability of a pause function;

the broadcast apparatus monitors communication with the mobile telephone and recognises tonal signals generated by the mobile telephone;

25 the user by operating one or more keys of the mobile telephone selects the pause function by causing the mobile telephone to generate a tonal signal which is received and recognised by the broadcast apparatus which then pauses the broadcast transmission to the mobile telephone; and

30 the mobile telephone receives in the digital instructions an instruction which associates a tonal signal with the pause function, the tonal signal being distinct from any signal generated by actuation of any of the numeric keys of the mobile telephone or of a
35 "*" or of a "#" key.

11. A method of operating a mobile telephone which has a first operating mode in which the mobile telephone can send and receive data transmitted digitally with at least some received data being displayed on a screen of the mobile telephone and which has a second operating mode in which the mobile telephone can be used to send and receive voice messages, wherein the method comprises the steps of:

5 using the mobile telephone in the first operating mode thereof to access computer apparatus of a distributed computer network such as the Internet to transmit digitally identification data to the accessed computer apparatus and to receive from the accessed computer apparatus instructions transmitted digitally; and

10 subsequently using the mobile telephone in the second operating mode thereof and connecting the mobile telephone with broadcast apparatus whereby a user of the mobile telephone hears via the mobile telephone a broadcast service transmitted by the broadcast apparatus; wherein:

20 the mobile telephone, in response to the digital instructions received thereby, displays data on the screen thereof during connection of the mobile telephone to the broadcast apparatus;

25 the displayed information indicates a rewind function;

30 the broadcast apparatus monitors communication with the mobile telephone and recognises tonal signals generated by the mobile telephone;

35 the user by operating one or more keys of the mobile telephone can select the rewind function by causing the mobile telephone to generate a tonal signal which is received and recognised by the broadcast apparatus which then time shifts the transmission broadcast to the mobile telephone; and the mobile telephone receives in the digital

instructions an instruction which associates a tonal
signal with the rewind function, the tonal signal
being distinct from any tonal signal generated by
actuation of a numeric key of the mobile telephone or
5 of a "*" or a "#" key.

12. A method of operating a mobile telephone , the
method comprising the steps of:

storing in a memory means of the mobile telephone
10 an instruction which associates a first text message
on a screen of the mobile telephone with a function of
generation of a tonal signal by the mobile telephone;
actuating keys of the mobile telephone to
highlight the displayed first text message and then
15 select the function associated therewith; and
the mobile telephone generating a tonal signal
according to the stored instruction which is distinct
from any tonal signal generated by actuation of a
numeric key of the mobile telephone or of a "*" or a
20 "#" key.

13. A method as claimed in claim 12 wherein:

the mobile telephone operated according to the
method has a first operating mode in which the mobile
25 telephone can send and receive data transmitted
digitally with at least some received data being
displayed on the screen of the mobile telephone and a
second operating mode in which the mobile telephone is
used to send and receive voice messages; and
30 the instruction which associates the first text
message with the function of generation of the tonal
signal is received by the mobile telephone when
operating in the first operating mode thereof from
remote computer apparatus of a distributed network
35 such as the Internet;

the received instruction is stored in the memory
means; and

the tonal signal generated according to the stored instruction is generated when the mobile telephone is operating in the second operating mode thereof.

5

14. A method as claimed in claim 13 wherein the received instruction is stored in the memory means only temporarily.

10

15. A method as claimed in claim 14 wherein the received instruction is received into and stored in the memory means whilst the mobile telephone is operating in the first operating mode thereof only for use during immediately subsequent operation of the mobile telephone in the second operating mode thereof.

15

16. Use of a mobile telephone in the method of claim 12

20

25

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☒ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☒ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.